

AUGMENTATION OF SOLID MOTOR PRODUCTION FACILITIES
(ASMP) PROJECT

REQUEST FOR PROPOSAL

For

CONSTRUCTION SUPERVISION AND
INSPECTION SERVICES

**for Construction Of Augmentation Of Solid Motor
Production Facilities (ASMP) Project at SDSC SHAR
(Civil, Electrical, AC and Steel Door Works)**



Satish Dhawan Space Centre SHAR
Indian Space Research Organization
Sriharikota -524 124, A.P

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PROPOSAL DOCUMENT, CLARIFICATION AND ADDENDUM

Proposals are invited from the interested firms for the enclosed scope of work in two-part bid. Part-1 Technical and Unpriced part of the work and Part-2 Priced Commercial part.

The RFP document is organized in four sections as follows.

Section –A	Introduction
Section –B	Scope of Work
Section –C	General Terms & Conditions
Section –D	Annexures

Title of the Entity: Augmentation of Solid Motor Production Facility (ASMP) Project

Title of the proposal: Construction supervision and Inspection Services for Construction of ASMP facilities (Civil, electrical, AC and steel doors)

Date of Public Notification issued: As per publication

Last Date of purchase / downloading tender Document: As per publication

Last date of submission of tender documents: As per publication

Place of submission of tender documents: SDSC SHAR, Sriharikota

1. PROPOSAL DOCUMENT

1.1 One set of proposal document along with the drawings is issued. Bidder shall sign and stamp each page of proposal as token of his acceptance & submit before placement of order.

1.2 Transfer of Proposal document issued to one Bidder to another is not permissible.

1.3 Proposal documents shall remain the property of Department and if obtained by one intending Bidder shall not be utilizable by another without the consent of the Department.

1.4 The proposal (Un-priced Techno-commercial bid) with a complete set of the required documents shall be up-loaded in ISRO e-procurement website.

1.5 The proposals shall be submitted on-line before the time limit for bid submission specified in the letter inviting bid.

1.6 Tenderer shall submit the open authorization online within the time limits specified in the letter inviting bid.

1.7 The proposal will be opened on the date and on the time specified in the letter inviting bid or as soon thereafter as convenient. Proposal not received in time will not be considered.

1.8 Bidders shall set their quotations in firm figures and without variations/additions in the terms of the proposal documents.

1.9 ADDENDA /CORRIGENDA

Addenda/corrigenda to the tender document may be issued by SDSC SHAR prior to the date of opening of the tenders, to clarify or reflect modifications in the contract terms and conditions. Such addendum/corrigenda will be distributed to each firm or person who had purchased the tender documents.

1.10 AMBIGUITY

Should there be any ambiguity or doubt as to the meaning of any of the tender clause/condition or if any further information is required, the matter shall be immediately brought to the notice of Head, Purchase & Stores, SDSC SHAR in writing for necessary clarifications prior to the opening of the tenders.

2 PREPARATION OF BIDS

2.1 SITE VISIT

The Tenderer shall visit SDSC SHAR and acquaint himself fully with the requirements and no claims whatsoever will be entertained on the plea of ignorance of difficulties in the execution of the work. Before submitting the tender the Tenderer shall be deemed to have clearly understood and satisfied himself regarding the work and services, all conditions liable to be encountered during the execution thereof and that prices, and/or compensation quoted in the offer are adequate and all inclusive with respect to all factors, circumstances and conditions likely to be incidental, both direct and indirect, to the work and services.

2.2 VALIDITY OF OFFER

Bid shall remain valid for acceptance for a period of 6 (Six) months from the due date of submission of the Bid. The Tenderer shall not be entitled during the said period to revoke or cancel his Bid or to vary the Bid except and to the extent required by Department and communicated in writing. Bid shall be revalidated for extended period as required by Department in writing. In such cases, unless otherwise specified, it is understood that validity is sought and provided without varying either the quoted price or any other terms and conditions of Bid finalized till that time.

2.3 COST OF BIDDING

All direct and indirect costs associated with the preparation and submission of Bid (including clarification meetings and site visit, if any), shall be to Tenderer's account and the Department will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bid process.

2.4 APPLICABLE LANGUAGE

The Bid and all correspondence incidentals to and concerning the Bid shall be in the English Language. For supporting document and printing literature submitted in any other language, an accurate English Translation shall also be submitted. Responsibility for correctness in translation shall lie with the Tenderer.

2.5 ARRANGEMENT OF BID

- The Bid shall be neatly presented on white paper with consecutively numbered pages. ***It should not contain any terms and conditions which are not applicable to the Bid.***
- The Bid and all details submitted by the Tenderer shall be signed and stamped on each page as token of acceptance by a person, legally authorized to enter into agreement on behalf of the Tenderer. Corrections/ alteration, if any, shall also be signed by the same person. Tenderer shall submit Power of Attorney in favor of the person who signs the Bid and subsequent submissions on behalf of the Tenderer.
- Department will not be bound by any Power of Attorney granted by the Tenderer or changes in the constitution of the firm made subsequent to submission of the Bid or after the award of the contract. Tenderer may however, recognize such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be borne by the Tenderer.
- The cancellation of any document such as Power of Attorney, partnership Deed etc should be communicated by the Tenderer to the Department in writing well in time, failing which Department shall have no responsibility or liability for any action taken by Tenderer on the strength of the said documents.
- Should the Tenderer have a relative or relatives or in the case of firm or company one or more of its shareholders or a relative or relatives of the share holder (s) employed in a senior capacity in Department's organization, the authority inviting Bids shall be informed of the fact at the time of submission of the Bid, failing which the Bid may be disqualified or, if such fact subsequently comes to light, Department reserves the right to take any other action as it deems fit in accordance with any applicable law, Rules, Regulations of the like in force for the time being.

2.6 SCHEDULE OF PRICES

The schedule of prices shall be read in conjunction with all the sections of proposal document. The price must be filled in the format for 'Schedule of Prices' – **Annexure-I**

2.7 DOCUMENTS COMPRISING THE BID

Bids shall be arranged in the following order.

2.7.1 PART – I TECHNICAL AND UNPRICED COMMERCIAL PART

Technical and unpriced commercial part shall comprise the attachments, specifying attachment number arranged in the order as follows:

- (a) Submission of bid letter along with one set of proposal document duly signed and stamped as token of acceptance.
- (b) Copy of Company's registration number certificate.

- (c) All the annexures enclosed in proposal duly filled, signed and sealed
- (d) Unpriced copy of schedule of prices with all other commercial terms and conditions duly filled (Prices to be kept blank), signed and stamped
- (e) Audited balance sheet including profit and loss account for the last three financial years showing annual turn over
- (f) Latest income tax clearance certificate.
- (g) List of projects in hand & completed during the last 3 financial year indicating the name of client, contact person, contract value, nature of work, work completed, work balance, name of Consultant, month & year of commencement & completion etc.
- (h) Organization chart for the proposed work with bio data of key personnel.
- (i) Pre-qualification criteria with supporting documents

2.7.2 PART – II PRICE BID

Price bid shall be filled in the on-line 'price bid' form of the e-tender only in ISRO e-procurement website <https://eprocure.isro.gov.in>.

SDSC SHAR may open Part – I of the bid on the due date of opening subject to meeting the bid evaluation criteria. Price Bids (Part-II) of technically and commercially acceptable offers shall be opened at a later date.

- b) SDSC SHAR reserves the right to reject any or all the Bids without assigning any reasons thereof.
- c) ***Any bids/offers with price details in Techno-Commercial Offer(Part –I) shall be rejected.***
- d) SDSC SHAR reserves rights to place order for either full quantities of all items or partial quantities and partial items based on the unit rates available.

2.8 EARNEST MONEY DEPOSIT

1.5.1 The tenderer shall remit **Rs 3 Lakhs** as Earnest Money Deposit (EMD) in the form of demand draft (DD) with the tender, failing which the tender will not be considered.

1.5.2 The EMD shall be remitted by a DD from any Nationalized/Scheduled Bank in favour of ACCOUNTS OFFICER, Satish Dhawan Space Centre SHAR, Payable at SBI, Sriharikota.

1.5.3 Cheques will not be accepted towards EMD.

1.5.4 EMD by the unsuccessful tenderer will be refunded after the finalization of tender. EMD shall not bear any interest.

2.9 CONTRACT PERIOD

The contract period for the scope of the work under this contract is **20 Months (twenty months) or till completion of construction contract whichever is later.**

3 Pre-qualification Criteria

S. No	CRITERIA	Vendor Compliance (YES*/NO)
3.1	Tenderer shall have experience in Construction supervision of similar tall RCC framed structures/buildings of minimum 15m height which involves RCC, steel, Masonry and deep pile foundations etc	
3.2	Prior experience of minimum 5 years in providing Supervision & Inspection services for Construction works which involves RCC, Steel, Masonry, Electrical Works, Steel door works, Gantry girders, heavy steel motorized doors, AC works like ducting Chillers, AHUs etc.	
3.3	Shall have Full-fledged office setup with qualified Technical staff of sufficient numbers to deploy the required people as per the tender.	
3.4	Party shall have average annual turnover more than of Rs 100 lakhs during last 3 years. Party shall submit the documentary proofs for supporting the above criteria. Department may visit the works executed or being executed for evaluation.	
3.5	Party should have satisfactorily completed the works during the last 7 years as mentioned below: <ul style="list-style-type: none"> • One order value of similar work costing not less than Rs 150 Lakhs • Two orders value of similar works each costing not less than Rs 100 Lakhs 	
*if YES please support with valid documents as proof.		

4 DETERMINATION OF RESPONSIVENESS

The bid which does not satisfy the pre-qualification criteria as mentioned in Section (clause) 3 above shall summarily be rejected and shall not be considered for further evaluation. SDSC SHAR will scrutinize bids to determine whether the bid is substantially responsive to the requirements of the tender documents. For the purpose of this clause, a substantially responsive bid is one which inter-alia conforms to all the terms and conditions of the entire Tender document without any deviations and reservations. The decision of SDSC SHAR shall be final in this regard.

5 BID EVALUATION

- 5.1 During evaluation, Department may request Tenderer for any clarification on the bid upon additional documents.
- 5.2 Techno-commercial discussion shall be arranged with Tenderer, if needed. Tenderer shall depute his authorized representatives for attending discussions. The representatives attending the discussions shall produce authorization from his organization to attend the discussion and sign minutes of meeting on behalf of his organization if required. The authorized representative must be competent and empowered to settle/decide on all technical and commercial issues.
- 5.3 The complete scope of work is defined in the Proposal document. Only those Tenderers who undertake total responsibility for the complete scope of work as defined in the Proposal document shall be considered.
- 5.4 In case Bid does not fully comply with the requirement of Proposal document and the Tenderer stipulates deviations to the clauses of the proposal in Schedule of deviations, which are unacceptable to the Department, the Bid will be rejected.
- 5.5 Performance of Tenderer on similar works executed/ under execution shall be taken into consideration before selecting the Tenderer for opening his price bid.
- 5.6 Department reserves right to visit client's site for verification/validation.
- 5.7 The time schedule for completion is given in the Proposal document. Tenderer is required to confirm the completion period unconditionally.
- 5.8 Department reserves the right to accept a bid other than a lowest and to accept or reject any bid in full or part without assigning any reasons. Such decisions by the Department shall bear no liability on the Department whatsoever consequent upon such decision.
- 5.9 The Tenderer, whose bid is accepted by the Department shall be issued a Letter of Intent (LOI) to proceed with the work. ***Tenderer shall confirm acceptance by returning a signed copy of the LOI along with 10% of total order value as security deposit within 10days from letter of intent (LOI).*** Thereafter Department may issue purchase order or Department will sign the Contract with successful Tenderer
- 5.10 Department shall not be obliged to furnish any information / clarification to unsuccessful Tenderers as regards to non acceptance of their Bids.

SECTION-A

Introduction of Proposed Facilities

1.0 General Introduction

Satish Dhawan Space Centre SHAR (SDSC SHAR) is one of the units of Indian Space Research Organisation (ISRO), Government of India, which is located at Sriharikota Island, 100 Km north of Chennai. SDSC SHAR is planning to realize new facilities and Associated Systems for augmenting the existing Solid Propellant Space Booster Plant (SPROB) as a part of its expansion programme.

Sriharikota is 18 km east of Sullurpeta in Nellore Dist. (Sullurpeta is on main rail line from Chennai to Vijayawada) Sriharikota is 100 km North of Chennai The actual site is located about 12.0 km from main gate of Sriharikota. All Civil, PH, Road, Electrical, AC & Steel Door works related to the augmentation of facilities are being taken up. The work involves construction of various buildings approximate height varying from 3.5 to 28 m. The buildings are scattered over an area of around 3 Sqkm. All the buildings will be taken up parallelly.

Department invites bids from Reputed agencies for providing CONSTRUCTION SUPERVISION AND INSPECTION SERVICES for Construction of ASMP facilities (Civil, electrical, AC and steel doors).

2.0 Major Units and Facilities covered under the Construction work:

1	Hardware Preparation Facility
2	Insulation Machining Facility
3	AP Storage Facility
4	AP Bin Storage Facility
5	AI Powder Processing Facility
6	HTPB & DOA Storage Facility
7	Bin Storage Facility for HTPB /DOA & Aluminium Powder
8	Minor Ingredient Processing Facility
9	TDI Process & Bin Storage Facility
10	AP Grinding Drying and Common Control Room
11	Bowl Cleaning Facility
12	Premix storage facility
13	Common Control Room for Mixing facility
14	2.5T Vertical mixer Facility
15	4.5T Mixer facility
16	Casting Facility
17	Assembly / De-coring Facility
18	Above Ground Curing Facility
19	Agni & Carton oven Facility
20	Agni Decoring Facility
21	Propellant Disposal Bed IV
22	Propellant Store Building
23	Inhibition facility and service Rooms
24	Inhibition & Tilting Facility

25	Propellant/Inhibition Machining facility
26	NDT facility
27	Chemical & Mechanical Lab
28	Shelter for Material Handling equipment
39	Inhibition Resin (IR-1) Premix Facility
40	Augmentation of Substations A, B & C
41	DG room
42	MRS Building
34	UPS Room
35	Water Supply system (Open wells, OHT, GLR, Treatment Plant, Distribution line)
36	Approach Roads
37	External Cable trenches
38	Fencings, Gates, Pedestals etc
39	Other related Civil structures

Brief Note on some of the Facilities

4.1 Hardware Insulation Lining (HIL) Facility

The facility is meant for preparation of the flight hardware for casting operations as per the standard procedures.

High Bay-1: The size of the bay is 63m x 22m.

High Bay-2: The size of the bay is 85.65m x 16m.

Low Bay: Low bay is also provided.

4.2.1 AP Grinding and Drying Facility (APGD) :

Mill Room with Blast wall: 8mx6.5mx4m (Ground Floor) – positions the micro pulveriser on an elevated platform of size 4mx4m.

Feeder Room: 8mx11.5mx7m (First Floor) – for collecting the material through flap door and to feed material to the micro pulveriser in the ground floor.

Collection Bay: 8mx5.5mx8m – collects the ground material, weighment and dispatch operations

AP Drying facility is configured with – Rotary Vacuum Dryer Bay 12mx17.5mx 13m ht – for housing Rotary Vacuum Dryer (5T capacity), Vibro screens; AP

Coarse Bag room: 8mx4mx4m ht – for storing AP Coarse in bags, Control room - 11mx6mx4m, Store room 5mx3mx4m, Compressor Room 5.5mx5mx4m and other service rooms.

A common Control Room is also planned for both the facilities operations with basic room sizing of 11m X 6m X 4mtrs along with other service rooms.

4.2.2 AP Storage Facility

The building is configured with AP Bags Storage bay - 51.5m x 20m x 7.5m ht, Service room - 5m x 5m x 4m ht and Panel room – 5m x 5m x 4m ht.

4.2.3 AP Bin Preparation & Storage Facility

Facility Configuration:

The facility is planned with a AP Coarse Sieving and bin storage bay – 24mx27.5mx11.0 m; AP Coarse bags storage – 8mx5mx4m and other service rooms.

4.2.4 Aluminum Powder Processing Facility

Facility Configuration:

The facility is configured with one Al.Powder processing bay – 12.5mx16.5mx12m; Electrical panel room – 3mx4mx4m, Storage room - 4mx4mx4m and a Data control room – 4mx4mx4m.

4.2.5 HTPB & DOA Storage Facility

Facility Configuration:

The facility is planned with three tankers of HTPB and two tankers for DOA. The Storage facility (in co-location to existing facility for ease of interconnection) is planned with 25m x 10m x 5m.

4.2.6 Bin Storage Facility for HTPB/DOA & Aluminum Powder

Facility Configuration:

The facility is configured with one HTPB/DOA and Al.Powder bin storage bay – 21m x23mx10 m; Service room – 5mx5mx3.5m; Panel room 5mx5mx3.5m and a Gasket/ valves and auxiliary store – 5mx5mx3.5m.

4.2.7 Minor Ingredient Processing Facility

Facility Configuration:

The facility is planned with Rooms for Al.Oxide grinding – 6mx8mx6m; ACR Blending – 10mx8mx10m; Inhibition Material Processing – 6mx6mx4m, Al.Oxide drying – 6mx5mx4m; Al.Oxide weightment – 6 m x 5m x 4 m and service rooms.

4.2.8 TDI Processing & Bin Storage Facility

The existing TDI Processing & Storage facility Configuration:

The facility is planned with TDI weighment and handling area – 12mx6mx7m, Control room/ Instrument room – 3mx6mx3.5m and Electrical panel room – 3mx3mx3.5m.

4.2 Mixing Facilities

4.3.1 Vertical Mixer Facility (2.5 Ton)

Facility Configuration:

The facility proposed is a two storey building with mixer and service rooms in ground floor and feeder room in first floor, merlon covering around the building. The feeder room has got a flap door on the floor for receiving the material from the basement. The configuration of different areas are finalised for Mixer Room: 14m x 12m; Service Room : 14.5m x 7m, A/c pump room : 6m x 6m and Deluge room: 3m x 3m.

4.3.2 Vertical Mixer Facility (4.5 Ton)

The configuration of different areas are - Mixer Room: 19.5 m x 11 m, Service Room : 15 m X 11 m, Chiller room : 12.9 m X 6 m ; A/c pump room : 6 m X 5.02 m; VVVF room: 4.8 m X 3.06 and Deluge room: 3.2 m X 3.0 m.

4.4 Propellant Casting & Curing Facilities

4.4.1a Casting Facilities

Facility Configuration:

The facility is configured with a Main High bay of Dimensions 55mx20mx23.6m height, Low bay of 10mx20mx7m height. In this facility a rectangular pit of 27.5mx10.5mx7m deep, casting well of 8.50m clear dia with 18.5m deep.

4.4.1b Assembly & De-coring Facility

This facility is configured with a Decoring Bay – (41.5mx20m) and Fixture storage bay (40mx20m) with Cranes, Assembly platform etc.

4.4.2 Above Ground Curing Oven

Facility Configuration:

The facility is configured with Curing Oven Bay -13.5mx12m for housing a hot air oven, High Bay Area – 26mx12m and other associated systems rooms like Service Room – 13.5mx10m, VVVF/ DBR room - 7.5mx4m, Control room-4mx4m, Store room -3.2mx4m and Deluge room – 4mx4m.

4.4.3 Agni & Carton Curing Oven

The facility is configured with Agni Curing Oven Bay -14.5 m X 9m for housing a hot air oven and other service rooms along with equipment.

4.4.4 Agni De-coring Facility

Agni grains are being processed in Agni casting facility.

4.4.2 Propellant and Inhibition Machining

Facility Configuration:

Propellant Machining facility is planned with a high bay of 30mx18.8mx16 m area and a low bay of 315 Sq.m.

4.5 Inhibition & Tilting Facilities

Facility Configuration:

First Building is planned with a High bay of 800 sq.m along with necessary service & storage rooms.

Second Facility is planned with high bay of 640 sq.m with necessary Service Rooms. This will be utilised for inhibition activity and segment/ hardware testing works.

4.6 NDT Facility

Facility Configuration:

The NDT facility is proposed to be located adjacent to the existing NDT facilities to optimize some of the common facilities. The facility has got one main bay for locating crane based Linac Handling system another bay for locating 450 Kv systems and associated service facilities. Facility is sized with 20mx20m Linac Bay with necessary service rooms.

4.7 Physical and Chemical Testing Laboratories

This is a RCC framed structure of 4.5m height.

4.8 Inhibition Resin (IR-1) Preparation facility

This is a RCC framed structure of 4.5m height. (21m x 10.5m)

4.9 Residual Propellant Management Facility

This is a RCC framed structure of 6m height. (10m x 10m) and a disposal bed

4.10 Material Handling Systems

These are all Sheets with structural steel frame for roofing and structure and roof with galvalume sheet.

4.11 Fire Fighting Systems

The existing facilities are suitably proposed to be augmented and additional GLR and OHT are also proposed as per the need. Fire protection systems have been provided and grouped in 'Six' Pump houses with provision of Fire pumps and Ground level Reservoirs(GLRs)/ Over Head Tanks (OHTs) to fight fire at various Process facilities and Raw material storage buildings including Magazines in SPROB.

4.12 Water Supply Systems

Water Sources, distribution & supply systems will be augmented suitably to meet the additional facilities requirements.

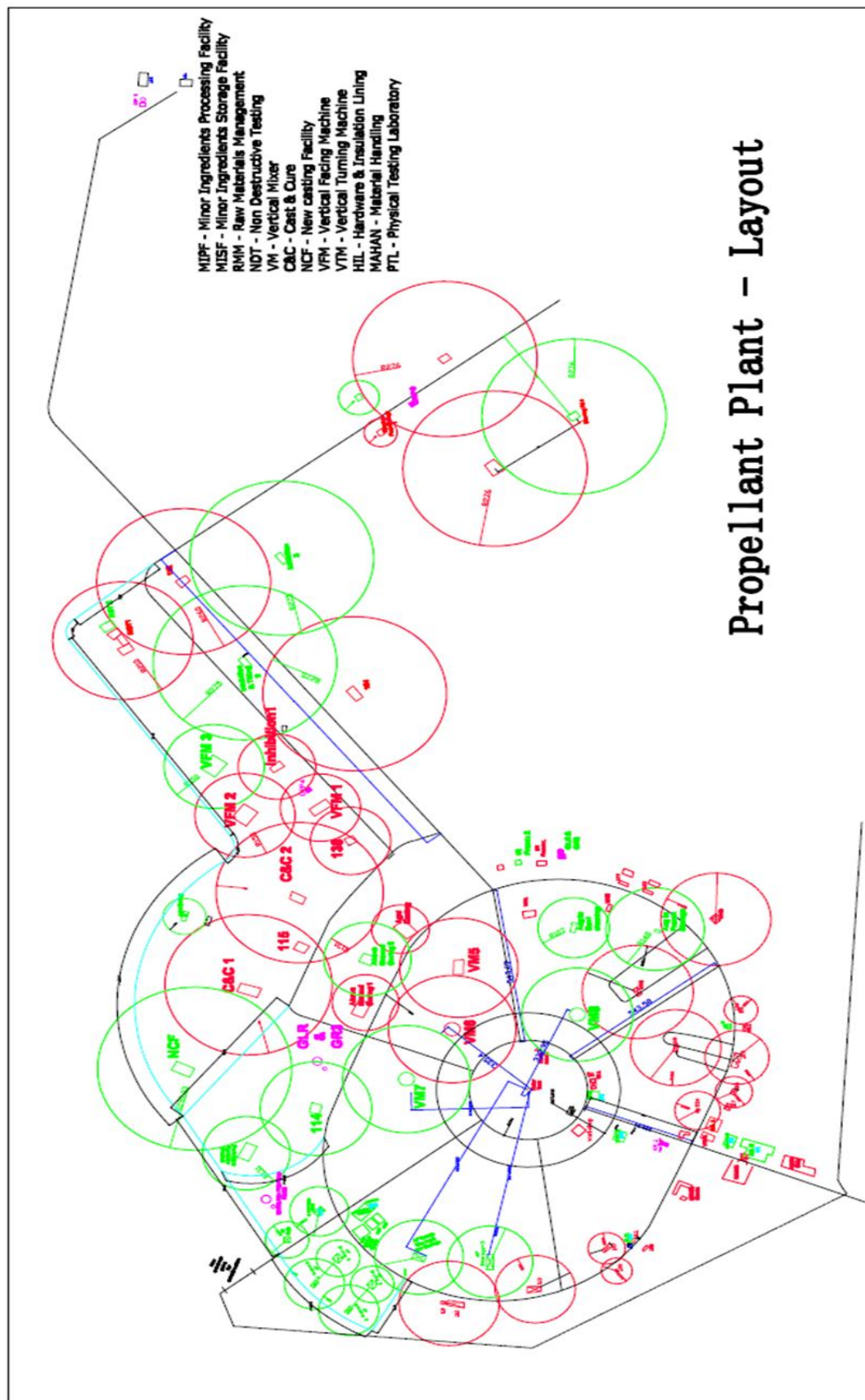
- Open wells
- HDPE pipe line
- OHT height 36m
- Pressure sand filters

4.13 Internal/ Approach Roads

BT Roads are planned to connect the all facilities.

5. LOCATION & SAFETY ASPECTS

The facilities planned for augmentation are located in proximity with the existing facilities for optimum management and sharing of resources. Augmented Plant layout is planned as per safety requirements and geographical feasibilities, ensuring independent approach during construction phase, without disturbing the ongoing production activities.



Propellant Plant - Layout

Section-B

Scope of Work

1.0 Scope of the work under this contract:

The total scope of **Civil, electrical, AC and steel doors** covered for realization of the above facilities shall be carried out under the **SUPERVISION OF SERVICE PROVIDER**.

All construction and testing works carried out at site are covered under this. The major part is Civil construction works:

Construction of the ASMP Project Facilities includes following :

1.1 Civil Works

The Civil works include construction, as per the construction drawings provided by the employer, on item rate basis inclusive of supply of all materials, construction and testing in respect of all facilities required for completion and handing over of the work as per technical specification and bill of quantities.

Broad scope of civil work shall include Surveying, Earthwork excavation, All types of foundations (Shallow/Pile foundations), RCC structure, Brick Masonry, Finishing works in respective premises along with cable trenches, pipe trenches etc. for facilities listed in section A

Scope shall also include construction of other miscellaneous units like pits, drains, trenches, paved areas, where necessary. Civil Works shall also include all works required for completeness of the project including water supply, sanitary, plumbing, Septic tanks etc. Special works like well sinking, piling, water proofing, sloped roofs etc. are also included in the scope.

1.2 Structural Works

Scope of work includes steel structural work for the various crane gantry girders, manual as well as motorized steel sliding doors, swing doors – comprising of normal doors with MS sheet with/ without bottom wheel, MS grill steel doors, lead sandwich steel door and framework of concrete doors which shall be installed on various RCC buildings of this project. The work shall also include various parking sheds for Cometo parking and Light vehicle parking. The work covers supply of all materials and consumables, fabrication, surface preparation, shop painting etc,

1.3 Electrical Works

The Scope of Electrical Works include LT Power Distribution System including Main PCC, Sub Panel Board, UPS Distribution, PDB, LDB, UDB, MCCB in Cubicle, Isolators, Switch Sockets etc., Lighting System consist of LED flameproof & light fittings, Area lighting and Signal Lighting System, General electrical equipment/fittings other than above mentioned items consisting of FLP/ Non-FLP Air Circulators, Exhaust Fans, Ceiling Fans, LAN & telephone sockets etc , Grounding/ Earthing System , lightning Protection System for facilities listed in section A

1.4 Air Conditioning & Ventilation Works

Air cooled Chilled water System, Split AC, Exhaust Fan, Air Circulators, Pedestal Air Circulators, Chilled water system with Scroll chillers etc are envisaged under the Scope of Air Conditioning & Ventilation Works for facilities listed in section A.

2.0 Scope of Inspection Services:

The scope of inspection under each category and quality monitoring services are given below but not limited to:

2.1 Inspection during Construction stage of ASMP works site:

- a) Checking of construction materials and collection of samples by the contractor from steel, cement, sand, brick, aggregate and any other materials used for construction and stamping at site for testing. Review of test reports to examine the quality and acceptance based on the results. Inspection of received material at site to assess quality.
- b) Visual inspection of soil during construction and intimating, if any variations with respect to soil investigation and report to contract manager/ EIC for further inspection.
- c) Witnessing sample collections and tests conducted by construction contractors as specified in the latest Indian standards and certifying the test results as per QAP.
- d) Witnessing the execution of all concealed items before concreting and certifying the same.
- e) Dimensional verification as per department approved drawings and standards. Checking levels of pile foundations and pile cap and all floor levels.
- f) Supervising the load test of pile foundation as per IS: 2911.
- g) Checking the coordinates of various members of structures.
- h) Checking the alignment of RCC structural members.
- i) Checking of the staircase interfaces with the structures, etc.
- j) Inspection of dimensions, orientation & level of all RCC structures, beams & foundation etc., during various stages of construction.
- k) Verification of the correctness of structural member construction with reference to approved detailed drawings.
- l) Review and supervision of safe construction practices during construction as per agreed HSE documents. Deviations to be informed to the contract manager immediately.
- m) Inspection and clearance at different stages of construction works: (1) Foundation (2) Flooring with ground Anchor (3) Floor levels as specified in tender (4) Roof level (5) Other services & utilities.

- n) Enabling to sort out on the issues on quality of construction arising at site, suggesting measures to improve quality.
- o) Monitoring the progress of work on day to day basis and preparation of weekly/monthly progress reports based on the reports of progress of work by CONTRACTOR.
- p) Party shall bring to the notice of the Department if any slippage or bottle neck occurs at any point of construction.
- q) Ensure that contractors carry out work in accordance with the approved quality assurance plan to meet the quality standards as per standards/codes.
- r) Party shall ensure that Department requirements are totally fulfilled as indicated in the contract by adopting necessary checklists and quality measures.
- s) Assessment of labour required from time to time to meet the targeted construction programme.
- t) Monitoring and follow up of field and laboratory test plan schedules with contractor and ensuring timely carrying out test for smooth and quality construction.
- u) Checking of accuracy of placement of all inserts/embedment during construction as per required tolerances.
- v) Checking of alignment/leveling of sole plates/l beams/foundation bolts as per the tolerances.
- w) Monitoring the Hydro test of pipelines and certifying the same.
- x) Certification of various items of work executed with quantity measurements submitted by contractors.
- y) Witnessing the calibration of Concrete batching plant and other equipment at the laboratory established by the construction agency.
- z) Issue of final acceptance certificate. Verification of acceptance test reports and issue of stage wise inspection report for bill verification and final inspection report at the time of handing over of building. Inspection Agency shall certify the total scope of work carried out and submit three copies of overall inspection document to Department in proper printed formats duly signed including as built drawings.
- aa) Extra work / Variation assessment and certification of estimate for recommendation of payment. The decision of the Engineer In Charge shall be final as regards extra work/ variation assessment and certification of estimate.
- bb) Any other work assigned by the Engineer In Charge which are not explicitly mentioned in the contract.
- cc) Tenderer shall submit the qualification and experience of people to be deployed for obtaining clearance from the Department.
- dd) Verification of welding joints etc as per drawings and witnessing the weld tests
- ee) Alignment of doors/ drive systems
- ff) Testing of AC ducts and chilled water piping systems

3.0 Quality Assurance Plan

Quality Assurance Plan will be approved by the department in consultation with inspection agency and construction contractor. Once the document is finalized the **SUPERVISION SERVICE PROVIDER** is responsible to ensure the inspection strictly as per the approved Quality Assurance Plan (QAP). All checkpoints are as per QAP required to be inspected thoroughly for meeting the system specification. Deviations if any shall be brought to the notice of the department and contractor for rectification.

4.0 Schedule of Deployment

The Service provider shall depute qualified and experienced inspection engineer(s) as per the qualification given in below table continuously at site for quality inspection as per site requirements.

The following personnel shall be deputed by the service provider at required time as specified in below table.

T- Start of the Main construction contract

S No	Category	Approx Numbers	Qualifications and experience	To be provided at (tentative schedule)
1	Senior Graduate Engineer (CIVIL)	01	BE/ B. Tech Civil Engineer with more than 15 year's Experience	T+0 months
2	Graduate Engineer (CIVIL)	02	BE/ B. Tech Civil Engineer with more than 5 year's Experience	T+0 months
3	Site Engineer (CIVIL)	06	Site Engineer with Diploma Civil with more than 5 years experience.	T+0 months
4	Graduate Engineer (ELECTRICAL)	01	BE/ B. Tech Electrical Engr with more than 5 year's Experience	T+2 months
5	Site Engineer (ELECTRICAL)	03	Site Engineer with Diploma Electrical with more than 5 years experience.	T+2 months
6	Graduate Engineer (AC & Mechanical)	01	BE/ B. Tech Mechanical/AC Engr with more than 5 year's Experience	T+5 months
7	Site Engineer ((AC & Mechanical))	01	Site Engineer with Diploma Mechanical/AC with more than 5 years experience.	T+5 months
Note: BE/ B Tech and Diploma in Engineering passed with First Class personnel only are to be deployed.				

SECTION-C
GENERAL TERMS & CONDITIONS

GENERAL TERMS & CONDITIONS:

- i. Service provider shall appoint engineers at site who shall be “Competent Personnel” of requisite experience mentioned in point 4.0 of section B. The experience of personnel shall be in RCC high rise building constructions. However the Inspection Agency shall provide bio-data of the personnel proposed to be deployed for Department’s approval. Addition and deletion in the personnel list shall be effected only with prior approval of ISRO with reasonable advance notice to ensure that inspection services do not suffer at any time whatsoever.
- ii. The duration of the contract will be 20 months (approx). The number of personnel required will be intimated from time to time based on the requirement and the service provider has to provide accordingly.
- iii. The construction work shall be in general six days in a week and also beyond office hours, holidays whenever required. Deployed staff shall meet the spontaneous demands of construction works.
- iv. Service provider shall make own arrangement for accommodation, transport to site of work, medical facility, food, communication facility for their personnel.
- v. In case of demand for mobilizing additional manpower for few days party shall provide support of one (or) two engineer on daily basis which will be paid on prorata basis.
- vi. Party shall not issue any news release, articles, brochure advertisements, prepared speeches, and other information covering the contract works without written approval of ISRO SHAR regarding the content and timing of such release.
- vii. The technical information, drawings, specifications and other related documents (which are all confidential) furnished by ISRO is the property of ISRO and shall not be disclosed or handed over to any other agency except for the purpose of execution of the contract.
- viii. **Site Office:** One room without any office furniture / equipment’s will be provided to party to carryout the day to day activities subject to availability.
- ix. **Payment Terms:** Payment will be made on monthly basis against producing invoice certified by the Engineer In Charge as per the agreed rates per month. In case of absence in the month, necessary deductions will be effected based on the pro-rata basis considering 26 days in a calendar month.
- x. **Taxes:** All statutory taxes including GST, levies etc shall be indicated separately in schedule of prices (annexure-1).
- xi. The rates quoted by contractor shall include minimum wage prevailing in the State for respective personnel, Principal Employer’s contribution and Employee’s contribution to EPF,ESI at prescribed rates, and BONUS as per the act. It should be ensured that the contractor comply with all labour laws, minimum wages act,

payment of Employees Provident Fund (EPF), and ESI, as applicable. The contractor shall indemnify and compensate SDSC SHAR, if SDSC SHAR as Principal Employer under the Contract Labour (Regulation & Abolition) Act, 1970 becomes liable to assume any liability towards the workforce engaged by the contractor. In the event, the provisions relating to recovery as provided in the relevant clauses of the said Act shall be applicable in toto.

SECTION-D ANNEXURES

Annexure I

Sl. No.	Description	Qty	Unit	Rate per Unit	Amount in Rs.
1	Charges towards Supervision & Inspection Services including logistics and office expenses etc.				
	CIVIL				
	(a) Senior Graduate Engineer with more than 15 years Experience	20	Man Months		
	(b) Graduate Engineer with more than 5 years Experience	38	Man Months		
	(C) Site Engineer with Diploma with more than 5 years experience.	120	Man Months		
	ELECTRICAL				
	(a) Graduate Engineer with more than 5 years Experience	15	Man Months		
	(b) Site Engineer with Diploma with more than 5 years experience.	47	Man Months		
	AC & MECHANICAL				
	(a) Graduate Engineer with more than 5 years Experience	15	Man Months		
	(b) Site Engineer with Diploma with more than 5 years experience.	15	Man Months		
	Sub Total (A)				
2	Goods and Service Tax on (A)	%			
	Any other taxes, levies as applicable				
	Please do not fill rates and amount for the document being uploaded in Techno commercial bid				
Total (1 + 2)					

FORMAT TO BE FILLED AND SUBMITTED BY THE BIDDER

Annex 2.1

S. No	Description	Supplier Response		
1.	Name of the company/ Firm :			
2.	Type of the Company : (Proprietary/Pvt. Ltd/Public Ltd/Joint Venture/Consortium)			
3.	If Company is Consortium please provide the signed copy Consortium Agreement document. :			
4.	Registration number & certificate :			
5.	Name & Address of the Office of the Chief Executive of the Company :			
6.	Contact person for this tender with name & address and contact number :			
7.	Locations of the Branches of Company (if any) :			
8.	From which year the Company is in operation :			
9.	Current Annual turn-over of the company :			
10.	IT returns for the last 3 years :			
11.	The Profit & Loss Account details for the last 3 years which is duly audited and Submitted as part of the Annual Report. :			
12.	In Rs. Lakhs only	2014-2015	2015-2016	2016-17
	Total assets (i) :			
	Current assets (ii) :			
	Total liabilities (iii) :			
	Current liabilities (iv) :			
	Net Worth (i-iii) :			
	Working capital (ii-iv) :			
	Turnover ` in lakhs :			
	Profit/Loss in Rs. lakhs :			
	Manpower details (Technician, Supervisor, QA & Inspection) :	Description	No. of Persons	Remarks
		Engineers		
		Admin & Acct		
		Supervisor		
13.	The major customers for whom similar works are provided (Enclose copies of the Purchase Orders) :			
14.	Any customers feedback on the services which is in writing (Pl. enclose copies) :			

Details of last 5 years' experience of contractor in executing similar type of work which are completed

Sl. No	Full postal address of the client with Contact Person	Name of the work	Value of the work (Rs. in Lakhs)	Nature/ scope of work
1				
2				
3				

Note: In order to consider as valid experience, all the experience has to be supported with the completion certificate and purchase order.

Details of present works being executed by the contractor

Sl. No	Full postal address of the client with Contact Person	Description of the work	Value of the work (Rs. in Lakhs)

Note: copy of purchase orders may be enclosed.

Signature of Authorized Person with Seal

Note: In order to consider as valid experience, all the experience has to be supported with the completion certificate and purchase order